REMARKS

The specification has been amended on page 1 to provide antecedent basis for the language in claim 12.

The Abstract has been amended such that it is on a separate sheet and is within the range of 50 to 150 words.

The claims have been amended to more clearly define the invention as disclosed in the written description. In particular, claim 2 has been amended to correct typographical errors.

The Examiner has rejected claims 2, 3 and 9-12 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,878,085 to McCalister et al. in view of U.S. Patent 6,853,695 to Betts et al.Applicants acknowledge that the Examiner has allowed claims 13 and 14, and has found claims 4-8 allowable over the prior art of record.

The McCalister et al. patent discloses trellis coded modulation communications using pilot bits to resolve phase ambiguities, which discloses several of the elements of, for example, claim 2. However, as noted by the Examiner, "McCallister et al does not teach a non-linear compensator coupled to receive a decoder output for compensating a decoder output signal."

The Betts patent discloses a system and method for deriving symbol timing.

Claim 2 (as well as claims 9-12) includes the limitation "a differential detector having a decoder for decoding said signals, wherein said differential detector further comprises a non-linear compensator coupled to an output of said decoder for

compensating a decoder output signal, wherein said non-linear compensator comprises a channel estimator for estimating at least one coefficient of at least one term of said decoder output signal, and a remover for removing said at least one term from said decoder output signal."

The Examiner now states:

> "Betts et al teaches a DFE in combination with a phase corrector and slicer that processes Non-linear output signals from (see fig.2b elements 26, 28, 33) to a non-linear decoder (see fig.1b element 25) for compensating a decoder output signal (col. 4, lines 23-35) wherein said non-linear compensator comprises a channel estimator for estimating (see fig.2b element 28 or 36) at least one coefficient of at least one term of said decoder output signal and a subtract is the same as the claimed (remover for removing) (see fig.2b elements 26 or 45) at least one term of said decoder output signal (see col.4, lines 1-65)."

Applicants submit that the Examiner is mistaken. In particular, Betts et al. discloses, coupled to an output of a nonlinear decoder 25, a first phase rotator 28, a second phase rotator 31, a phase corrector 36 coupled to receive an output from the second phase rotator 31, the phase corrector 36 having an outut coupled to inputs of the first and second phase rotators, and a decision feedback equalizer (DFE) 33 coupled to an output of the second phase rotator 31. An output from the DFE 33 is substracted from the decoder output signal in subtractor 26. Apparently, the Examiner is equating these components to the channel estimator of the subject invention for "estimating at least one coefficient of at least one term of said decoder output signal". However, as specifically indicated in Betts et al. at col. 3, lines 54-59, "In

the next step, the results of the decision feedback equalizer 33 are subtracted 26 from the incoming signal. This step allows the receiver to subtract 26 from the signal any past signals that may have seen time dispersion as a result of the channel. The resulting signal, eq_xeye 27, is then fed to three different components."

Applicants submit that it should be apparent that the output signal from DFE 33 is not an estimate of at least one coefficient of at least one term of the decoder output signal, and that the difference circuit 26 of Betts et al. does not remove "said at least one term from the decoder output signal".

In view of the above, Applicants believe that the subject invention, as claimed, is not rendered obvious by the prior art, either individually or collectively, and as such, is patentable thereover.

Applicants believe that this application, containing claims 2-14, is now in condition for allowance and such action is respectfully requested.

Respectfully submitted,

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